Better Buildings®
U.S. DEPARTMENT OF ENERGY

Better Buildings Residential Network
Peer Exchange Call Series

Energy Efficiency and Demand Flexibility – Promoting and Scaling Grid-Interactive Efficient Buildings (GEBs)

April 27, 2023

U.S. DEPARTMENT OF ENERGY

Agenda and Ground Rules

- Moderator
  - **Jonathan Cohen,** Better Buildings Residential Network, DOE Residential Buildings Integration Program (RBI)
- Agenda Review and Ground Rules
- Residential Network Overview and Upcoming Call Schedule
- Opening Poll
- Featured Speakers
  - **Kate Strickland,** Smart Energy Power Alliance (SEPA)
  - **Siva Sankaranarayanan,** EPRI
  - **Alicia Noriego,** Edo Energy
- Open Discussion
- Closing Poll and Announcements

Ground Rules:

1. **Sales of services and commercial messages are not appropriate** during Peer Exchange Calls.
2. Calls are a safe place for discussion; **please do not attribute information to individuals** on the call.

The views expressed by speakers are their own, and do not reflect those of the Dept. of Energy.

Join the Network

Member Benefits:

- Recognition in media, social media and publications
- Speaking opportunities
- Updates on latest trends
- Voluntary member initiatives
- One-on-One brainstorming conversations

Commitment:

- Members only need to provide *one number*: their organization's number of residential energy upgrades per year, or equivalent.

Upcoming Calls (2nd & 4th Thursdays):

- *5/11: The Envelope Please…Lessons Learned from Home Performance with ENERGY STAR Award Winners*
- *5/25: TBA*

Peer Exchange Call summaries are posted on the Better Buildings website a few weeks after the call

Kate Strickland

Smart Energy Power Alliance (SEPA)

Smart Electric Power Alliance

Unlocking a GEBs Future: Accelerating Coordinated Utility Programs

Kate Strickland, Manager, SEPA

DOE Better Buildings Residential Network Peer Exchange Call – April 27th, 2023

Smart Electric Power Alliance

SEPA Overview

Vision and Mission

Smart Electric Power Alliance

Vision

A net-zero carbon energy system that is safe, affordable, reliable, resilient and equitable

Mission

To accelerate the transformation to a carbon-free electricity system through actionable solutions

Membership

Smart Electric Power Alliance

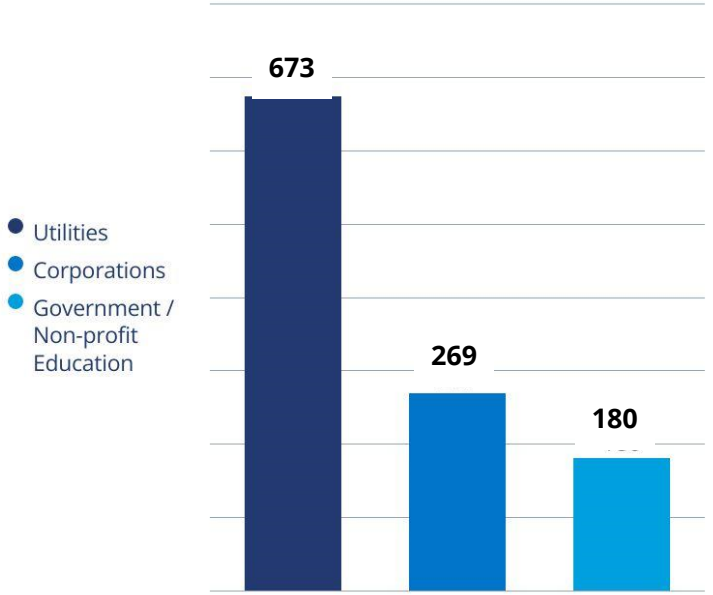
SEPA is a **membership organization** comprised of utilities, industry partners, regulators and other stakeholders.

1,100+
Total Members

83%
Of utilities with carbon-free or net-zero emissions goals

66%
Of U.S. customer accounts served

84%
Of utility commissions



Pathways

Smart Electric Power Alliance

Regulatory and Business Innovation

Facilitates the transformation of utility business models and state regulatory processes needed to achieve a carbon-free electricity system.

Electrification

Facilitates the transformation of the nation's vehicles and buildings to be powered by carbon-free electricity.

Grid Integration

Enables the industry to better integrate carbon-free energy into the grid with positive impact to affordability, safety, security, reliability, resilience, equity and customer satisfaction.

Smart Electric Power Alliance

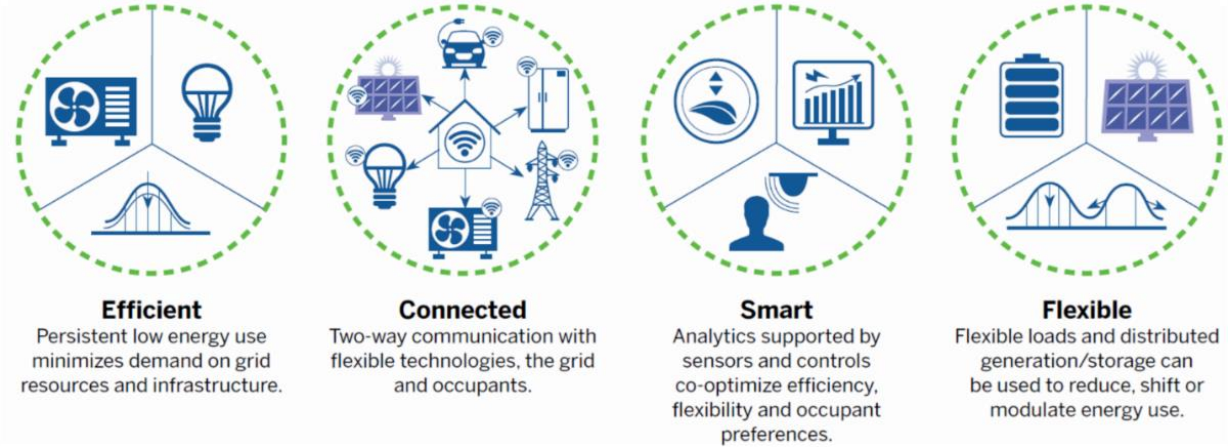
Unlocking a GEBs Future

The Evolving GEBs Landscape

DOE Goal: Triple EE & Demand Flexibility in residential & commercial buildings by 2030 (2020 baseline)

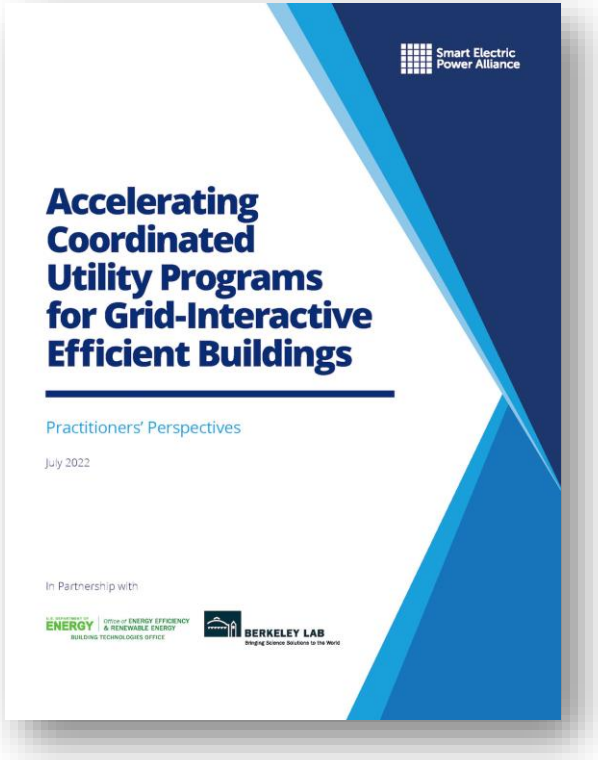
DOE Building Technology Office's GEB Definition

Energy-efficient buildings with smart technologies characterized by the active use of distributed energy resources (DERs) to optimize energy use for grid services, occupant needs and preferences, and cost reductions in a continuous and integrated way.



Source: U.S. Department of Energy, A National Roadmap for Grid-Interactive Efficient Buildings, 2021.

Report & Case Studies



What's in the report?

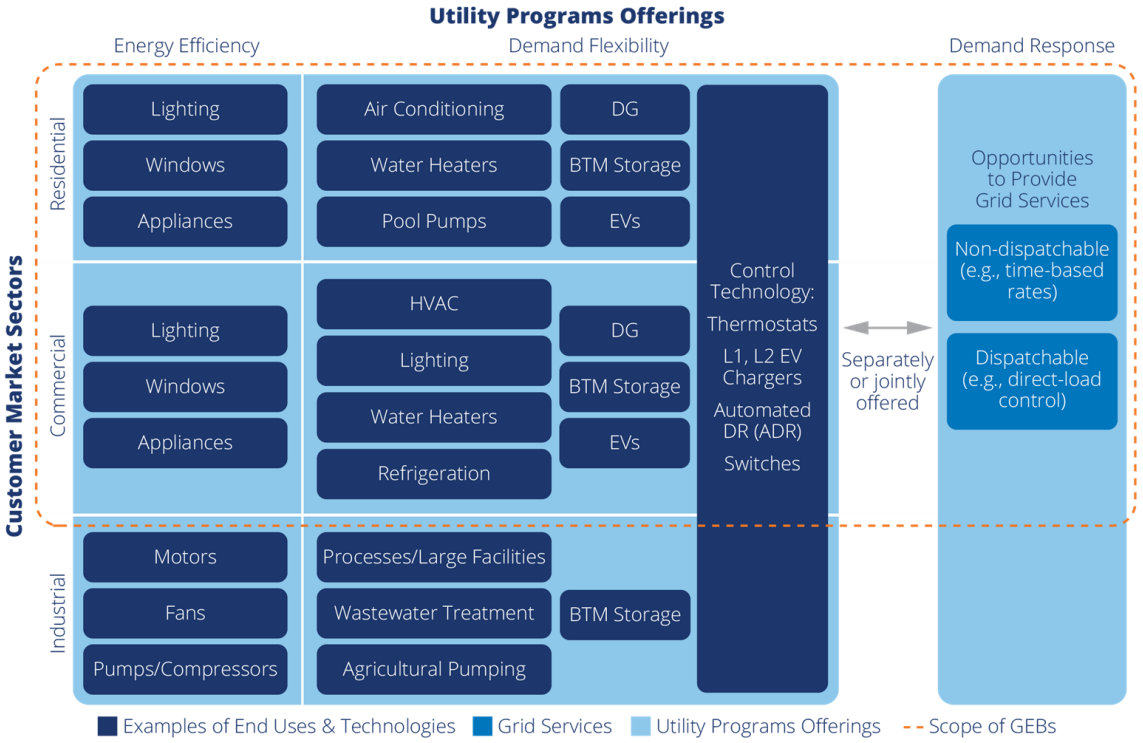
- Practitioner perspectives on challenges to and potential solution strategies for the building energy program transition
- Identifies challenges of deploying effective coordinated energy efficiency, demand flexibility, and demand response utility programs
- Provides solution strategies to support all stakeholders looking to unlock a GEBs future
- Includes 8 case studies

Supported by the U.S. Department of Energy and Lawrence Berkeley National Laboratory

Project Scope: Coordinated Programs and GEBs

Smart Electric Power Alliance

Figure 1. Project Scope: Utility Coordinated EE+DF(+DR) Programs and GEBs



Source: SEPA, 2022

Project Framing: Current State & Coordinated Program Types

Smart Electric Power Alliance

Current Program State

- **Fully optimized and coordinated programs are still nascent**
- **Continuum of current program activity** (investigation, piloting, full deployment)
- Majority of study participants **currently operate traditional EE and DR programs**, with a few also providing DF offerings
- **Program integration early successes primarily due to supportive regulatory environments** combined with internal drivers
- **Type 1 Programs** represented the majority of activity

Table 2. Program Types & Characteristics

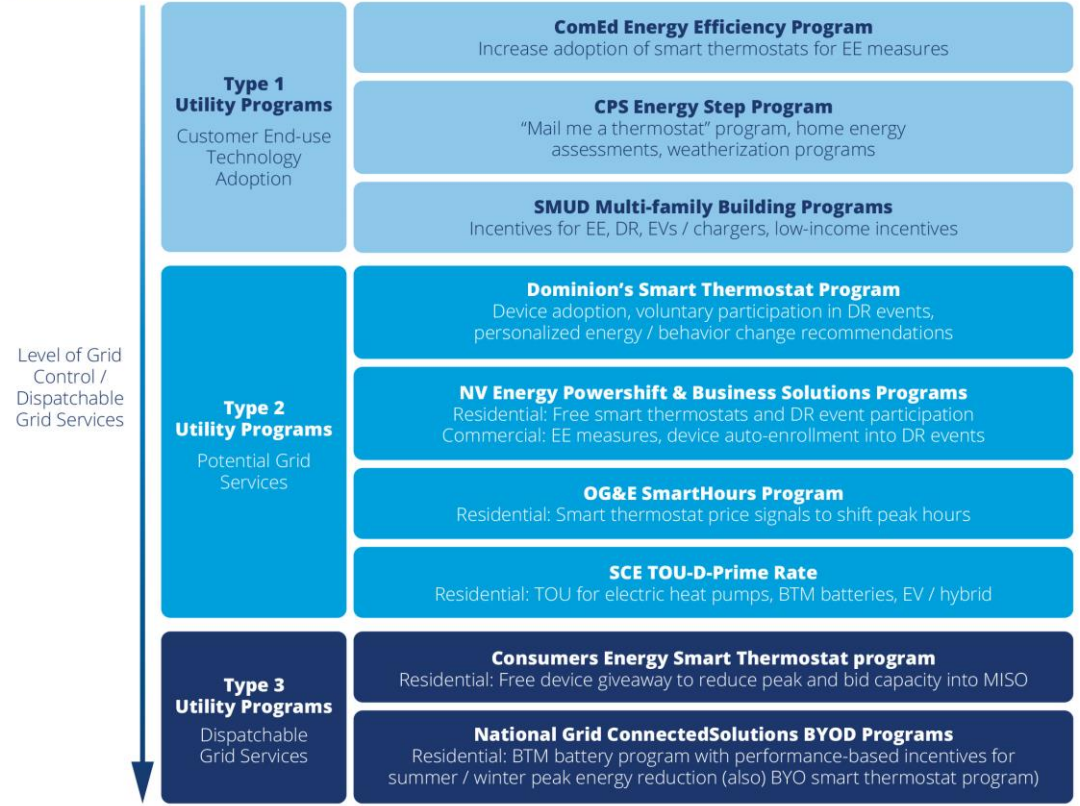
Characteristics	Program Types		
	Type 1 EE+DF: Programs Promoting Customer End-use Technology Adoption	**Type 2 Integrated EE+DF(+DR): Programs Promoting Customer End-use Adoption with Potential to Provide Grid Services**	**Type 3 Coupled EE+DF(+DR): Programs Promoting Customer End-use Adoption Linked to Dispatchable Grid Services**
EE & DF Approach	Integrates EE and DF program offerings to customers		
DR Approach	Not coupled with DR (i.e., not tied to grid services)	Integrates with non-dispatchable DR (e.g., includes the potential to provide grid services by pairing with time-varying rates)	Couples with dispatchable DR (i.e., includes the potential to provide grid services through dispatchable programs)
GEBs Promotion	Promotes GEBs by increasing the efficiency and adoption of EE+DF technologies in buildings		
		Promotes GEBs by offering opportunities to co-optimize across energy cost, grid services, and customer preferences	

Source: SEPA, 2022

Program Types: Examples

Smart Electric Power Alliance

Figure 3. Examples of Utility Coordinated EE+DF(+DR) Program Framing Across Project Typology



Source: SEPA, 2022

Key Findings: Challenges

Smart Electric Power Alliance

- Organizational & Structural Silos
- Existing Regulatory Frameworks
- Utility Models & Valuation
- Program Design & Customers
- Technical Implementation

Challenge: Organizational & Structural Silos

Smart Electric Power Alliance

Key Challenge	Potential Solution Strategies
Utility Internal Silos	• **House EE/EE + DF teams under one umbrella** • **Coordinate with other departments / teams** early on in the development process
Separate Program Administrators	• **Organize and/or mandate coordination meetings** between program administrators with state officials • **Establish data-sharing platforms** that help automate useful information sharing • **Revise existing policies** to establish program integration as a priority and potentially a success metric
Differing Objectives Between Program Partners	• **Review all program partner business models** and potential contract structures • **Proactive planning and discussions** among program partners to clarify customer relationship ownership

Challenge: Existing Regulatory Frameworks

Smart Electric Power Alliance

Key Challenge	Potential Solution Strategies
Regulatory Innovation Frameworks	• **Increase acknowledgement and acceptance of bounded pilot risk** and the need for flexibility • **Increase opportunities for discussion/feedback from regulators** during pilot and program planning • **Enable a more-flexible regulatory structure that allows for pilot and program evolution** as learnings emerge • **Provide financial support for highlighting pilot successes** and customer benefits, as well as research and development (R&D) projects
Regulatory Collaboration Frameworks	• **Regulatory engagement during program development** (e.g., staff briefings, technical sessions) • **Coordination across all entities** that interface with the same customers • **Increase data access and process transparency** for all stakeholders • **Multi-agency/department collaboration** within governments and program administrators • **Leverage different strengths** among program administrators and/or stakeholders • **Share lessons learned across jurisdictions**

Challenge: Program Design & Customers

Key Challenge	Potential Solution Strategies
Cost-Effectiveness	• **Support AMI deployment / data analysis** to better understand or measure program value & cost-effectiveness • **Collaborate regionally** (especially in areas without regional organized wholesale markets) to help utilities and participants assess value • **Conduct pilots**, which if exempt from stricter cost-effectiveness requirements that may apply to programs, can help assess cost-effectiveness • **Review existing cost-effectiveness requirements** for potential enhancements and alignment with national best practices
Evolving Program Metrics	• **Collaborative discussions with internal and external stakeholders** can help increase buy-in and align metric changes with regulatory/policy objectives, program administrator objectives, and other stakeholder objectives • **Clear direction from regulators and internal leadership** on program objectives • **Thoughtful selection of new metrics** - considering data availability, methods for developing baselines and setting performance goals

Challenge: Program Design & Customers cont.

Smart Electric Power Alliance

Key Challenge	Potential Solution Strategies
Customer Recruitment & Retention	• **Customize and communicate the primary value proposition** for each customer segment/class for program recruitment and retention • **Consider offering upfront incentives (e.g., rebates)** to encourage program recruitment • **Consider offering ongoing incentives (e.g., rate discounts)** to encourage program retention, as relevant to program objectives
Advancing Equitable Participation	• **Recruit an income-diverse customer participant pool** for pilots to determine strategies to support increased LMI participation • **Partner with trusted local community-based organizations** to design programs and identify and engage LMI customers • **Work with rental housing market stakeholders** to identify and assist LMI customers • **Consider implementing a form of PBR that incentivizes utilities to prioritize serving LMI customers** and/or establish a legislative directive to focus on equity

Key Takeaways - Program Scaling Strategies

Smart Electric Power Alliance

- **Actively seek regulatory feedback** and discussion during the piloting process
- **Publicly highlight pilot successes** and customer benefits as much as possible
- **Structure pilots with the intent of transitioning to a full program**
  - ~ Use the pilot to help quantify cost-effectiveness parameters / BCA impact streams
  - ~ Structure pilot offerings to be similar to what might be offered in a full program when / where possible
  - ~ Ensure diverse pilot participation and /or employ the concept of targeted universalism to help ensure that a full program will be accessible to everyone
  - ~ Work with / collaborate with the team(s) who would implement / roll out a full program if they are different from the team(s) to plan / implement pilots

Contact Us

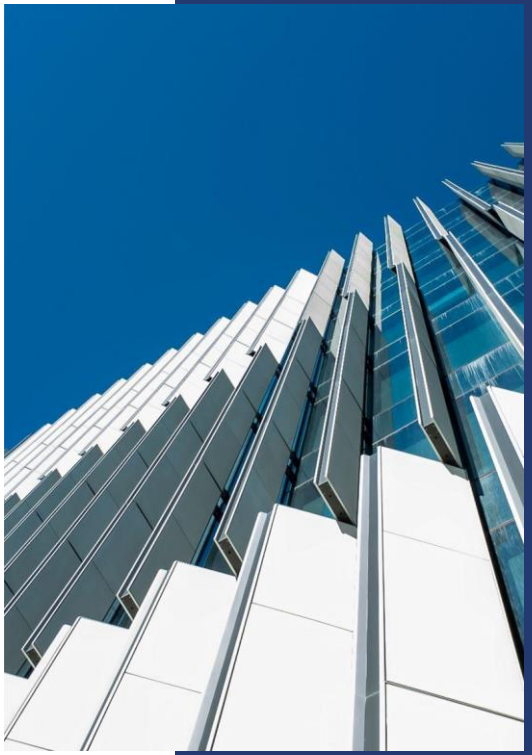
Smart Electric Power Alliance

Kate Strickland

Manager, Regulatory & Business Innovation
kstrickland@sepapower.org

SEPA

1800 M Street, NW Front 1
#33159
Washington, DC 20036



Siva Sankaranarayanan
EPRI

Scaling Grid Interactive Efficient Buildings

A Case Study in Multifamily Affordable Housing

Siva Sankaranarayanan
Principal Technical Leader, EPRI

April 27, 2023.

Big Picture – Building Decarbonization Framework

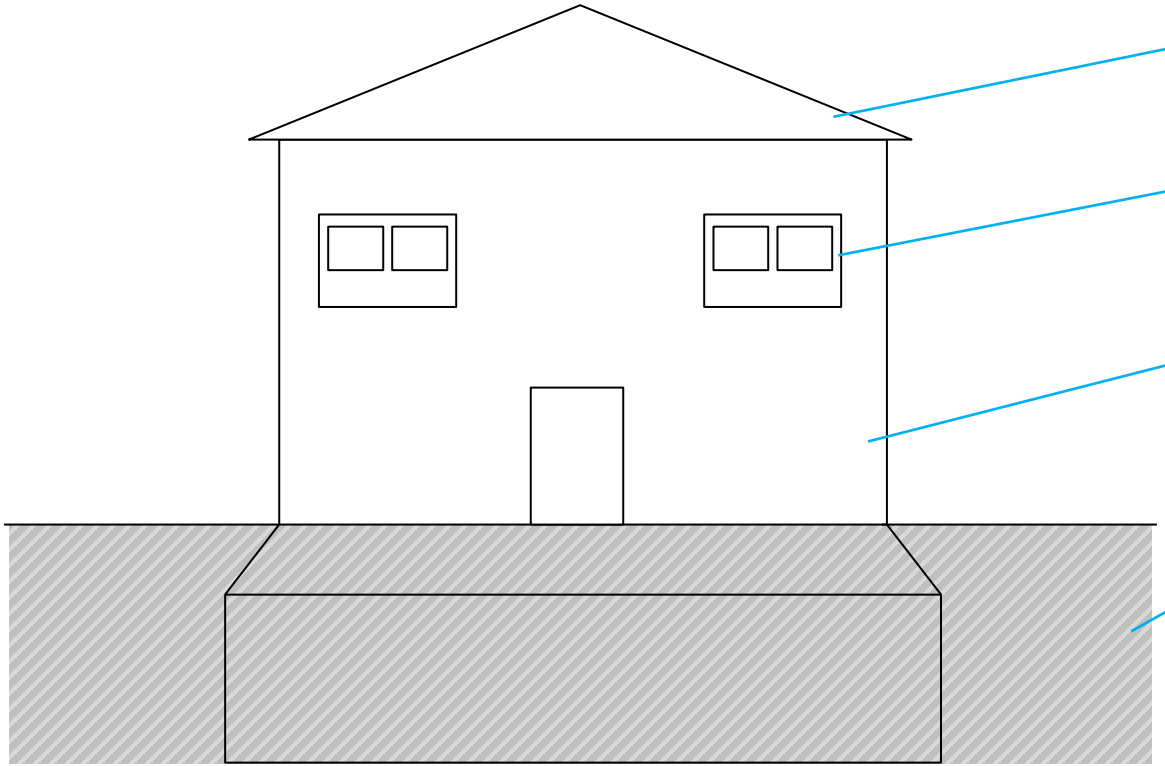
DRIVERS (D)	STRATEGIES (S)	ACTIONS (A)
Policy - State, Local goals - Corporate goals - Federal policy **Market** - Customer interest - Customer adoption **Technology** - Technology Readiness - Product/Technology Support	**Efficiency** - Building Envelope - Improved end-use efficiency **Electrification** - Space Conditioning - Water Heating - Appliances/Cooking - EV Infrastructure **Flexibility** - Distributed Energy Resources - GEB & Connected Communities **Low-Carbon Resources** - Dual-fuel pathways - Hybrid strategies for cold-climate	**Programs** - Reduced first cost - Improve customer enrollment - On-Bill Financing - Equitable Decarbonization **Rates** - Rate Alignment with electrification **Codes & Standards** - EV Readiness for new construction - End-use flexibility standards - Special provisions for disadvantaged communities

Why Multifamily? Why Affordable Housing?

- Relatively high proportion of building stock in American cities
- Significant challenges in decarbonizing MFAH
  - High first costs & high retrofit costs
  - Split Incentives & business model challenges
  - Retrofits impacted by capacity constraints
  - Equity considerations
- Significant effort needed on workforce development
- Emerging technologies that provide feasible solutions
  - Emergence of viable 120V Heat Pump technologies is a potential game changer!
  - Emergence of centralized HPWH products
- Emerging business models that can help
  - Incentivizing efficient technology adoption
- Potential for replicability to other communities
- Policy push in the form of BIL and IRA

This is a hard problem but technology maturity & market drivers are helping

Building the solution for GEB



Finish with flexibility (Grid Interactivity)

Include right-sized DERs

Electrify end-uses (wherever appropriate)

Foundation is energy efficiency

What's needed is a GEB playbook for MFAH…

Case Studies to consider – Scaling GEB

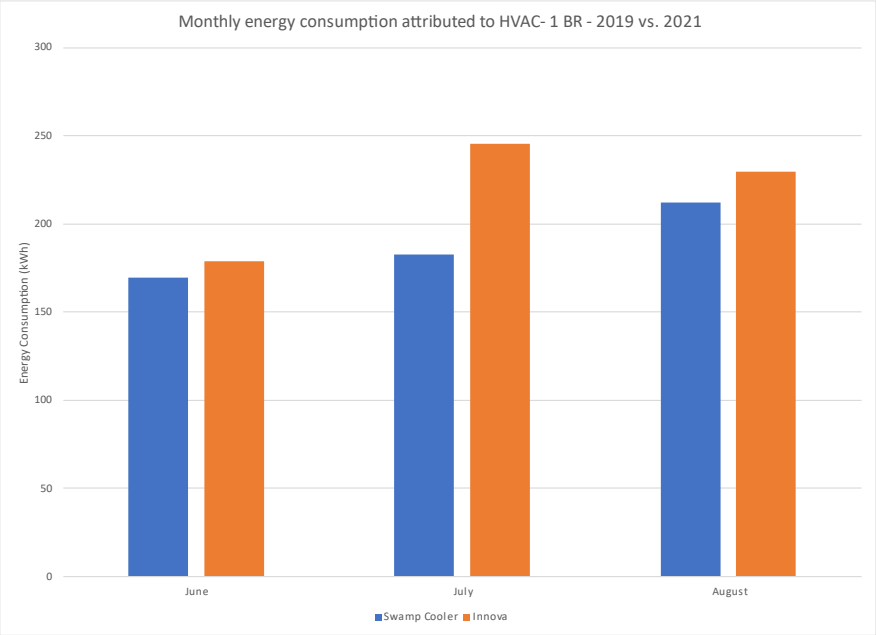
- Deep Efficiency With Emerging Tech
  - 44-unit garden style low-rise complex in Fresno, CA
  - Hot-Dry CZ-3B
  - 1, 2, 3, and 4 BR units
  - 100A capacity per building
  - Swamp Coolers
  - Gas Wall Furnaces
  - Unitary Gas Water Heaters
  - 120 V Innova Heat Pumps
  - Sanden CO2 HPWH (centralized config)
  - Community Solar PV

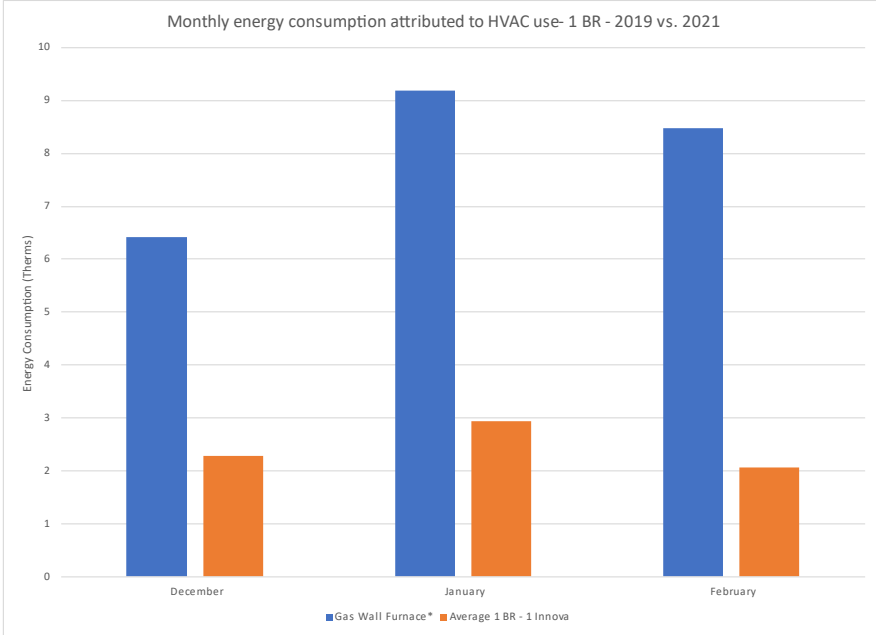
- Efficiency + DER + Demand Flexibility
  - 60 unit mid-rise 2-building complex in Compton, CA
  - Hot-dry CZ-3B
  - 1 and 2 BR units
  - New construction
  - CA 2016 Title 24
  - Electric end-uses
  - 60kW Solar PV
  - 60kW/120kWh Battery
  - Behavioral demand flexibility

- Multi-regional Scaled GEB Retrofits
  - 300 units in Seattle, WA + 300 units in NYC, NY
  - Marine 4C & Mixed-Humid 4A
  - 1, 2, and 3 BR units
  - 9 total communities for retrofit
  - Centralized and Unitary HP HVAC + HPWH
  - Solar PV, EV Charging
  - BAS + DERMS for demand flexibility

Case Study 1 – Deep Efficiency with Emerging Tech

Energy Performance Comparison – 1 BR

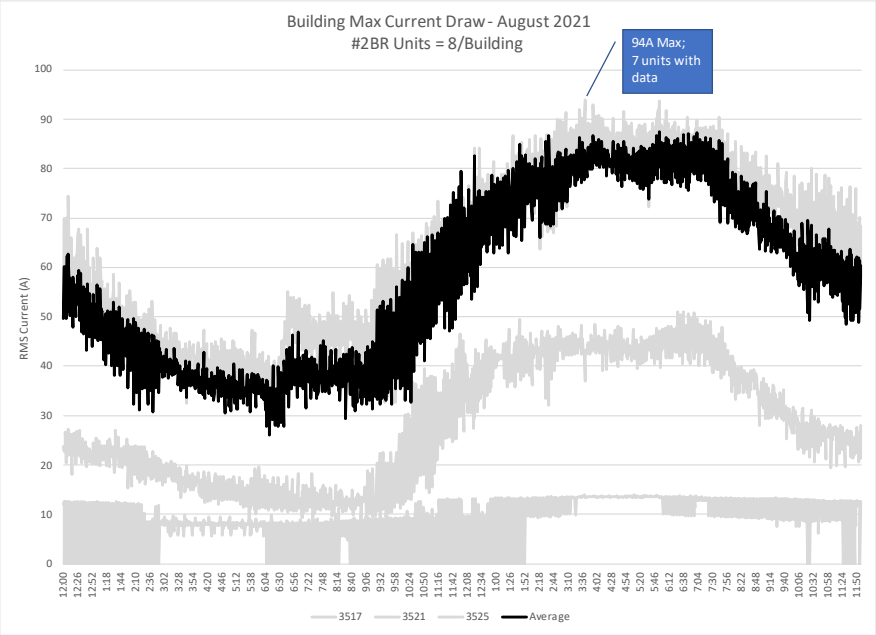


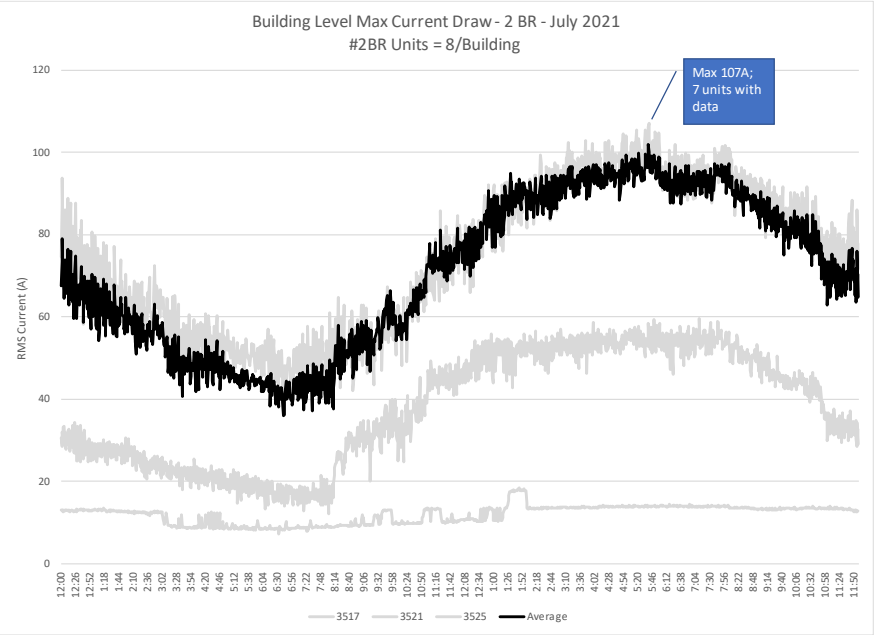


- Innova energy consumption is slightly higher than swamp cooler
- Higher energy use is largely driven by increased cooling needs in 2021 compared to 2019.

- Innova energy consumption is significantly better than gas wall furnace
- Significantly better performance may also be attributed to envelope improvements in the community.

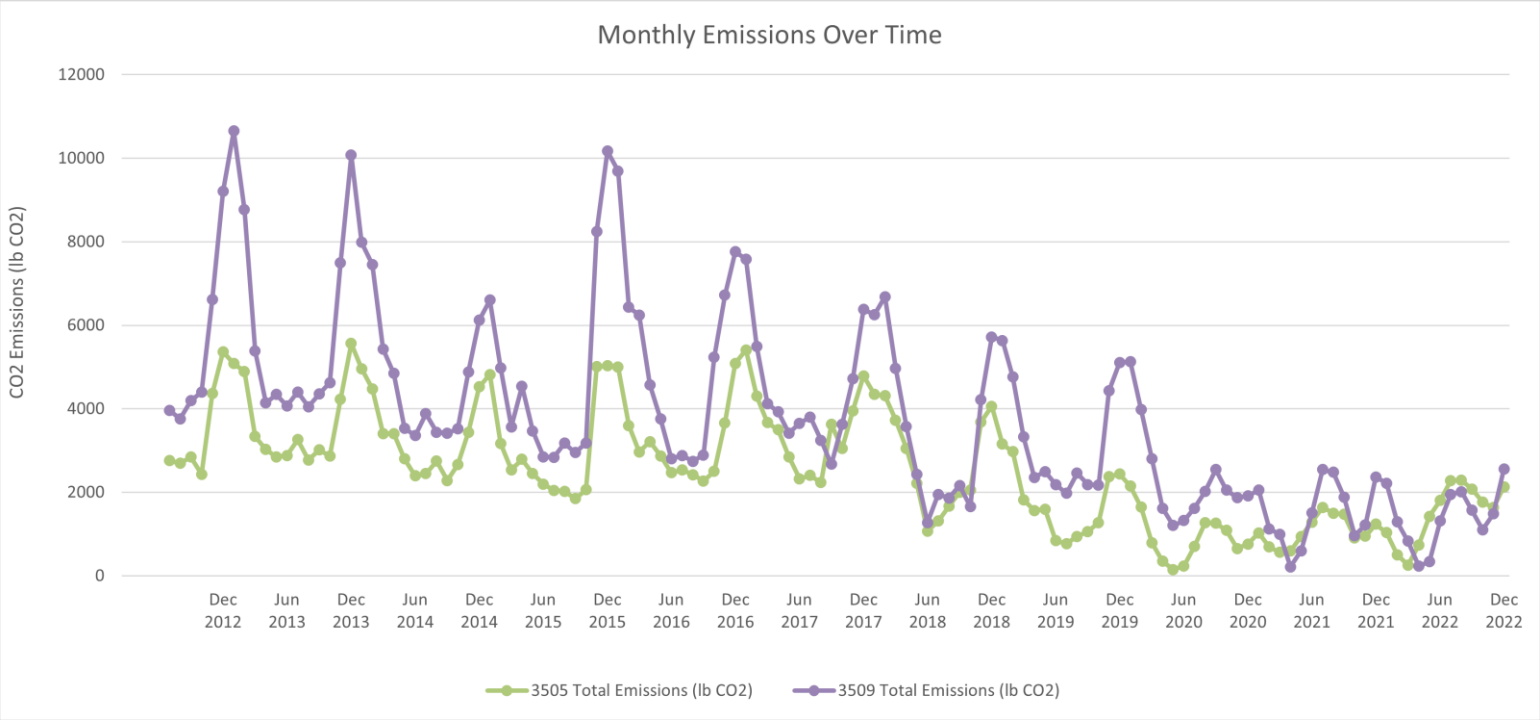
Is coincident use a cause for concern?





- Max current draw with multiple Innova units averages out ~ 15A per unit
- At a max of ~ 7.5A per Innova, the use of 2nd unit is not likely to cause breakers to trip unless there are other high current loads on the same circuit.

Community GHG Emissions



Key Takeaways

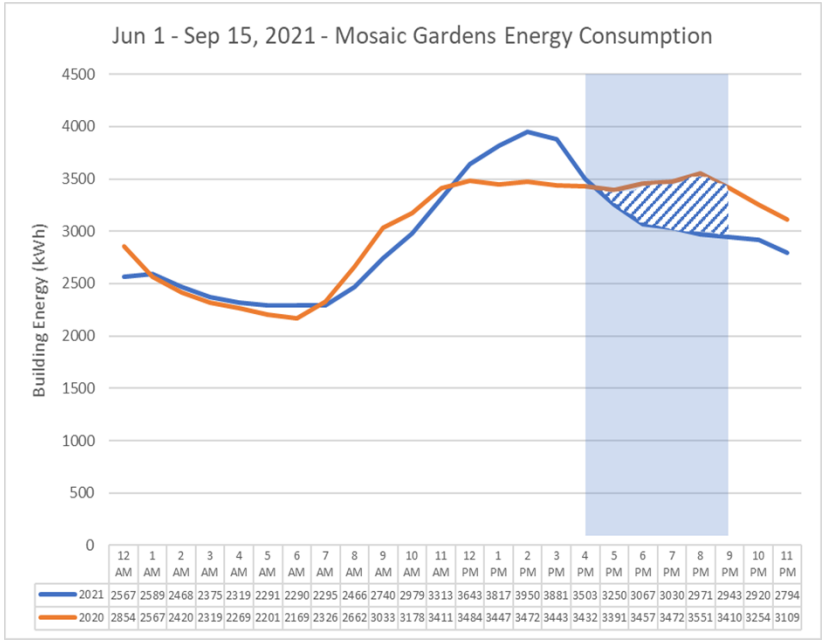
The results indicate the potential for Innova to be a viable solution for retrofits in affordable housing given the significant reduction in winter energy consumption compared to moderate increases in summer.

Sanden CO2 heat pump water heaters contributed heavily to the year-round reduction in GHG emissions.

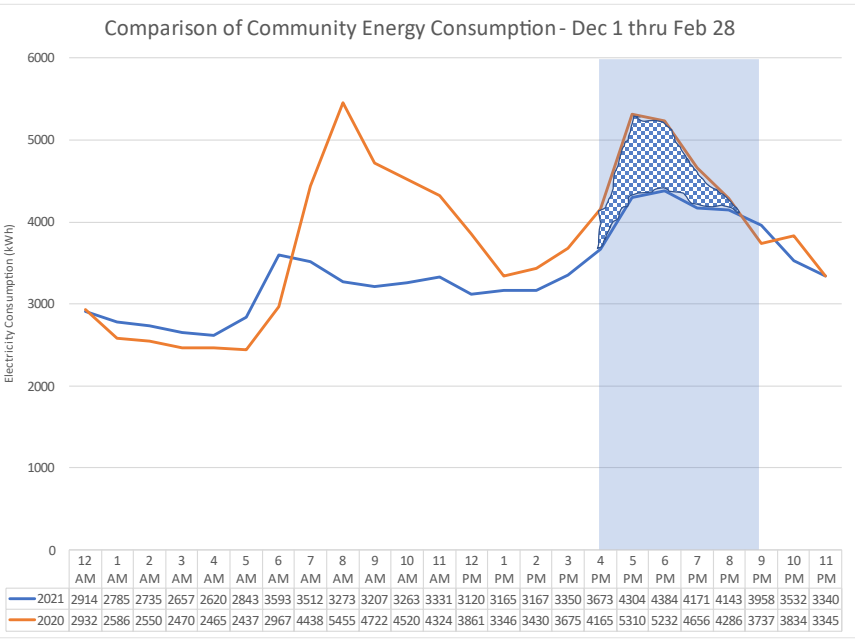
Innova heat pumps have about 0.5 kW per heat pump flexibility capacity and Sanden CO2 HPWH have about 1kW per HPWH flexibility capacity. Flexibility potential can be exploited to perform load-shifting.

Case Study 2 – Efficiency + DER + Demand Flexibility

How does demand flexibility help?



	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
2021	2567	2589	2468	2375	2319	2291	2290	2295	2466	2740	2979	3313	3643	3817	3950	3881	3503	3250	3067	3030	2971	2943	2920	2794
2020	2854	2567	2420	2319	2269	2201	2169	2326	2662	3033	3178	3411	3484	3447	3472	3443	3432	3391	3457	3472	3551	3410	3254	3109



	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
2021	2914	2785	2735	2657	2620	2843	3593	3512	3273	3207	3263	3331	3120	3165	3167	3350	3673	4304	4384	4171	4143	3958	3532	3340
2020	2932	2586	2550	2470	2465	2437	2967	4438	5455	4722	4520	4324	3861	3346	3430	3675	4165	5310	5232	4656	4286	3737	3834	3345

- Load shifting away from 4-9pm timeframe towards 12-2 PM with new peak around 2pm in Summer
- Overall reduction in load (over 24 hours) is 11% (9.7 MWh) and 13% (2.9 MWh) during the 4-9pm timeframe in Winter.

Key Takeaways

Behavioral methods with on-going incentives for inducing peak shift is an effective strategy in LMI communities

Significant challenges with getting storage economics to work in community's favor even with high TOU peak relative to off-peak

Case Study 3 – Multi-reginal Scaled GEB Retrofits

DOE project overview

DESIRED (Deep Efficiency and Smart-grid Integrated Retrofits in Disadvantaged Communities) aims to tackle challenges of transforming existing building stock into connected communities of GEB (Grid-Interactive and Efficient Buildings).

Leverage coordinated controls of buildings and community scale DERs to achieve grid and customer benefits

Explore the applicability of high-efficiency and cutting-edge connected technologies in LMI housing

Develop opportunities to scale and "*productize*" the approach for widespread adoption

DESIRED Project Details

- Project conducted in 2 regions
  - Seattle – Seattle City Light and Community Roots Housing
  - NYC – NYPA, NYCHA
- Project partners: GTI Energy (M&V), Sentient Buildings (BAS), Vistar Energy (BEM)
- Demonstration includes 300+ units (5 communities) in Seattle and 300+ units (5 communities) in NYC
- Tech transfer to LMI communities, utilities, and exploration of opportunities to "*productize*" through utility-technology provider partnerships.

Get more info on all projects at LBL's Connected Communities page

Highlights of the project

120V Monoblock heat pumps, VRF systems, centralized & 120V HPWHs

Bifacial solar PV, bidirectional EV fleet charging

Marginal carbon emissions-driven coordinated load and DER controls

Enabling capacity market participation, temporal congestion alleviation

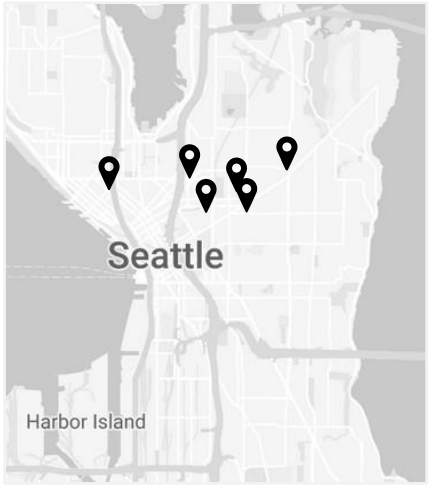
End-to-end standards-based approach

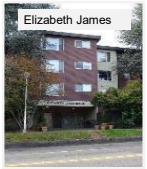
Innovative community engagement and workforce training

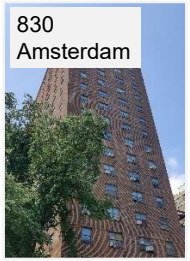
Multi-regional, different climate zones and utility/regulatory frameworks

Go beyond one-off demonstrations to study the effect of scale

Communities under consideration







** Including White Center – new construction*

9 communities ~ 600 living units ~ 2000 residents

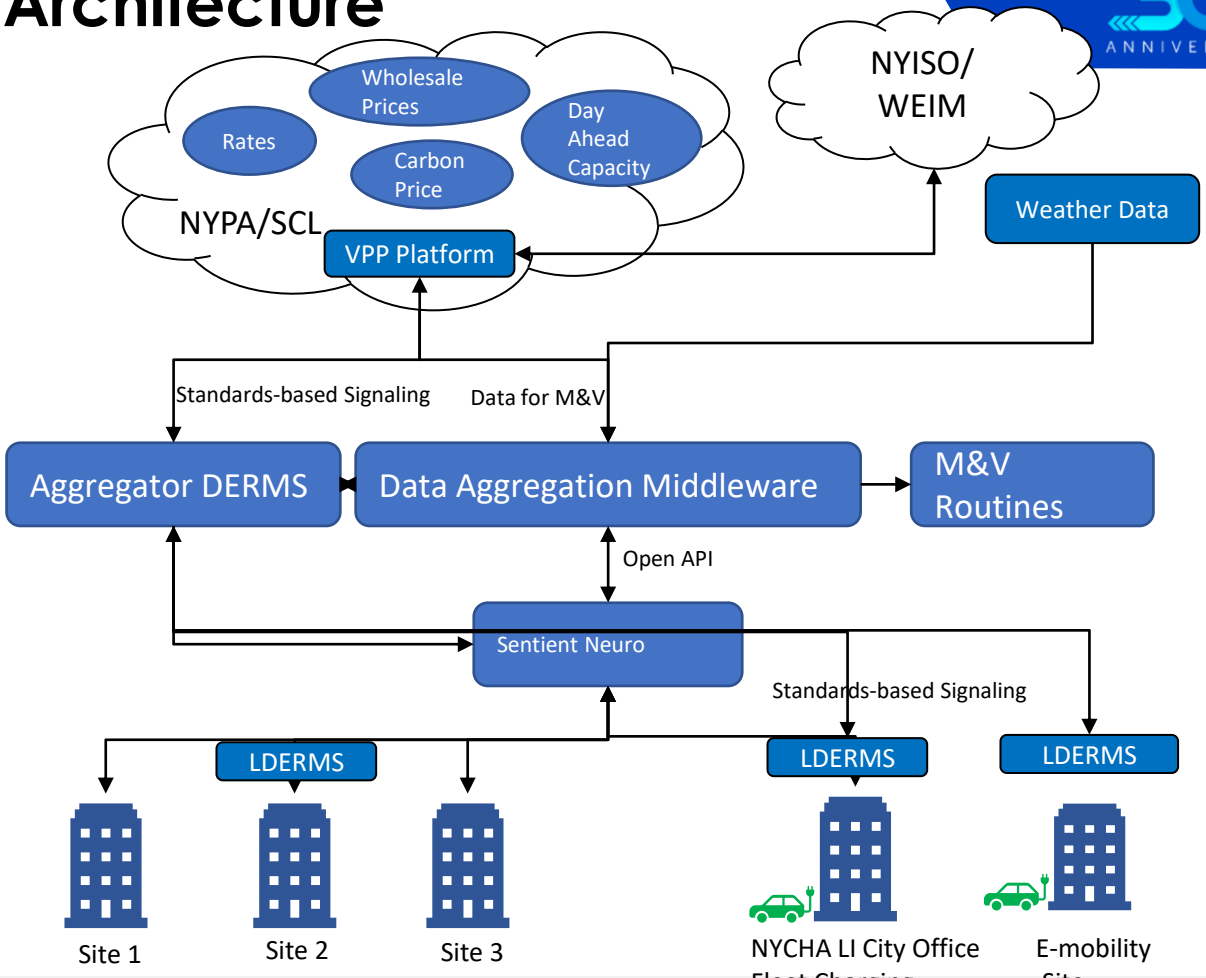
Evolving DESIRED Architecture

Utility Layer provides grid-scale & utility-driven stimuli, use-cases, and evaluation of project benefits

ADERMS provides standards based signaling for Grid services; Middleware provides data aggregation functions for M&V

Sentient Buildings provides fleet level aggregation and control of HVAC and WH loads

Community Layer is the built-environment, flexible loads, and customer-sited DERs; LDERMS provides DER control through standards-based signaling

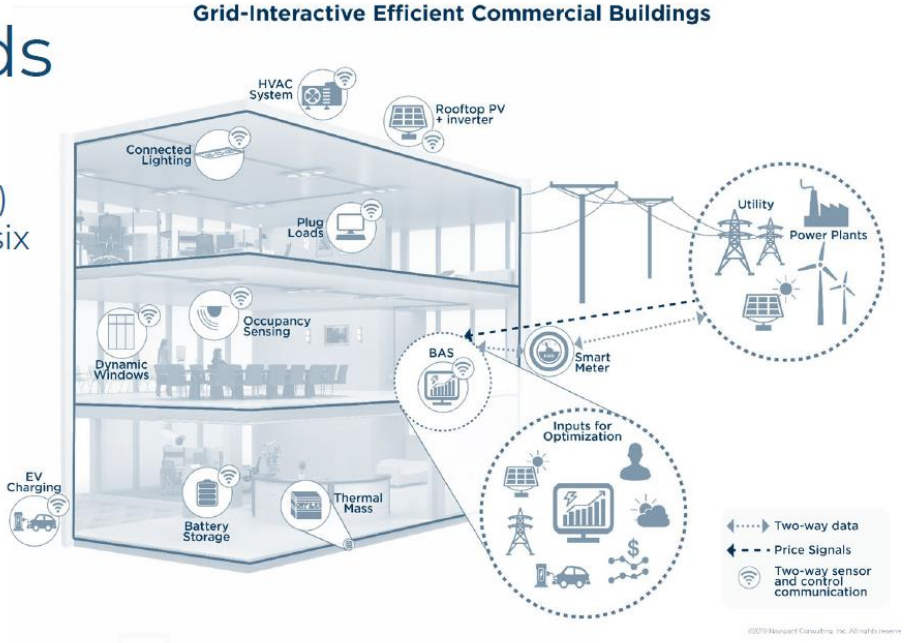


Potential for extensive data informed policy

Evaluation Methods

The National Coordinator (Berkeley Lab) developed evaluation methods for the six topics identified in the funding opportunity announcement:

1. Customer Experience
2. Grid Services and Energy Impacts
3. Benefit-Cost Analysis
4. Business Models
5. GHG Emissions
6. Resilience



Connected Communities
U.S. DEPARTMENT OF ENERGY

What are the research questions?

Can DESIRED provide a set of positive outcomes for the community and the grid?

How can DESIRED scale to a national footprint?

What are the appropriate set of market conditions, e.g., rates, regulations, business models, that allows for scale?

Will continue to share our results and insights as we discover more

Alicia Noriego
Edo Energy

Better Buildings

Energy Efficiency and Demand Flexibility – Promoting and Scaling Grid-Interactive Efficient Buildings

April 27th, 2023

EDO: Energy Demand Optimization

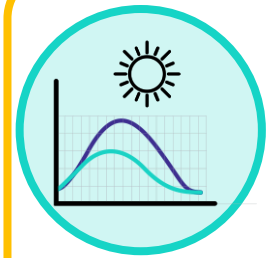
Recruit & Onboard

Collect Data
Map to building automation systems, meters, occupancy sensors, weather

Process Data
Algorithms based on decades of experience in tuning and controlling buildings

Tailored Insights
For utilities, building operators, & occupants

Optimize Operations
Deliver actionable insights and monitor performance

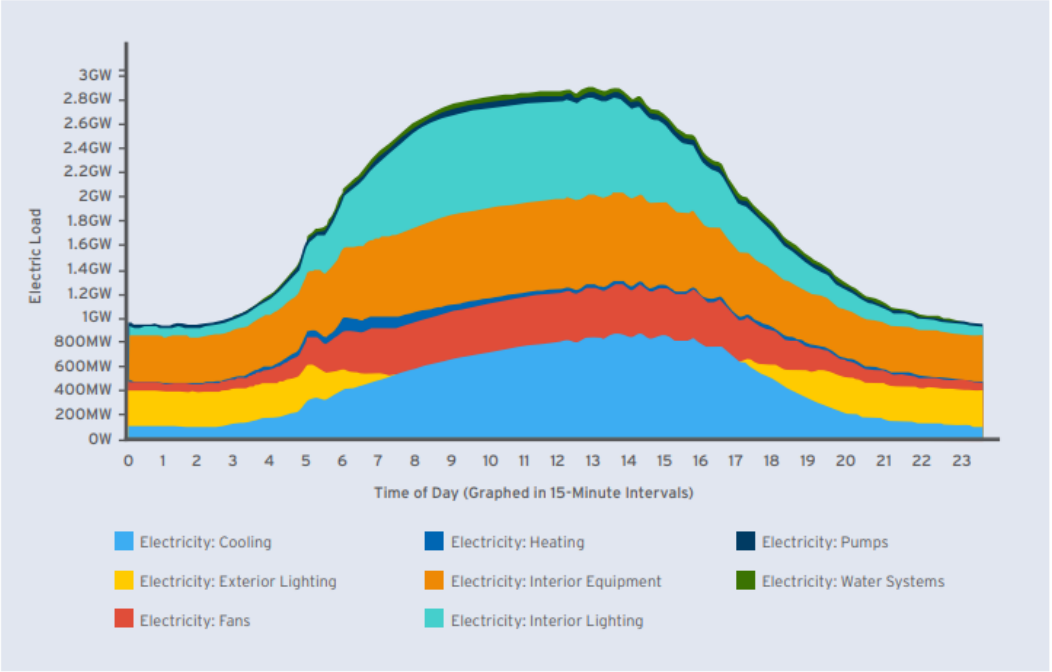


Shape Load of Energy Use
Forecasting & continuous optimization for grid & building

Buildings as Flexible Loads

- What is the primary driver of the load?
- How flexible is it?
- Is it coincident with grid peak?

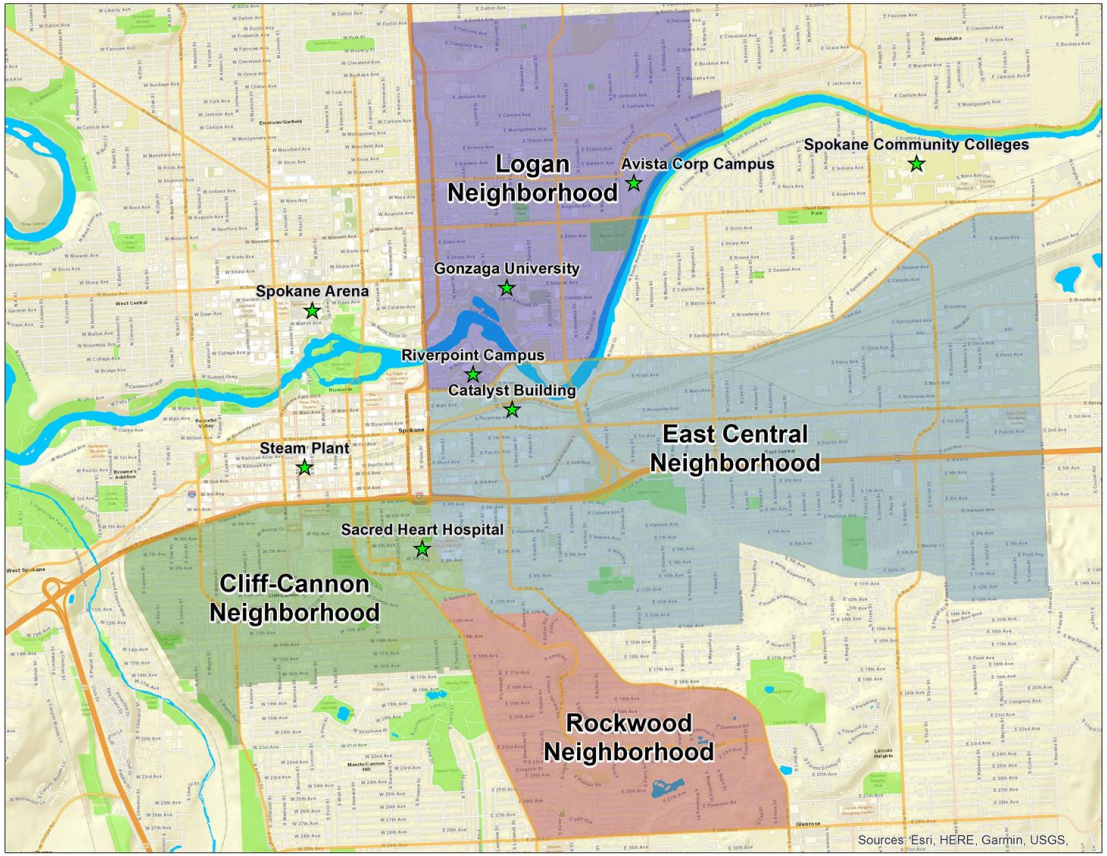
Exhibit 5 Example of a daily building load profile broken down by end use



Source: ComStock National Dataset - V1 accessed via comstock.nrel.gov[2]

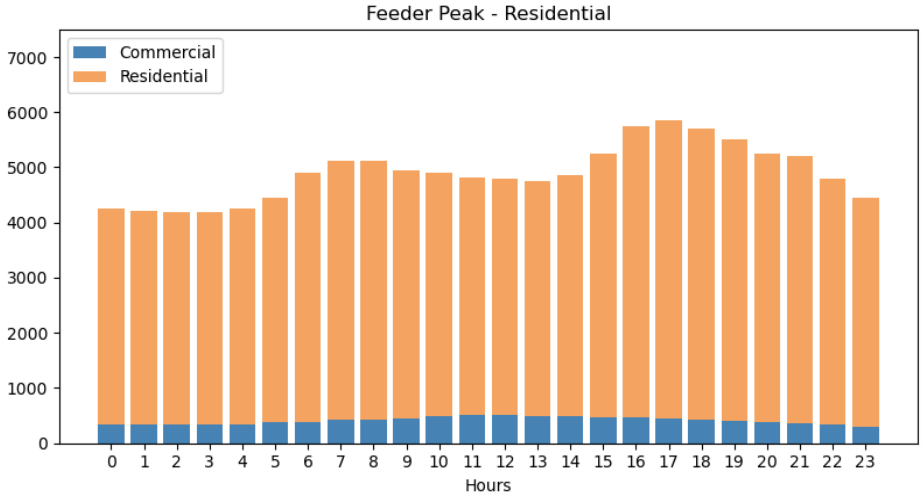
DOE Connected Communities

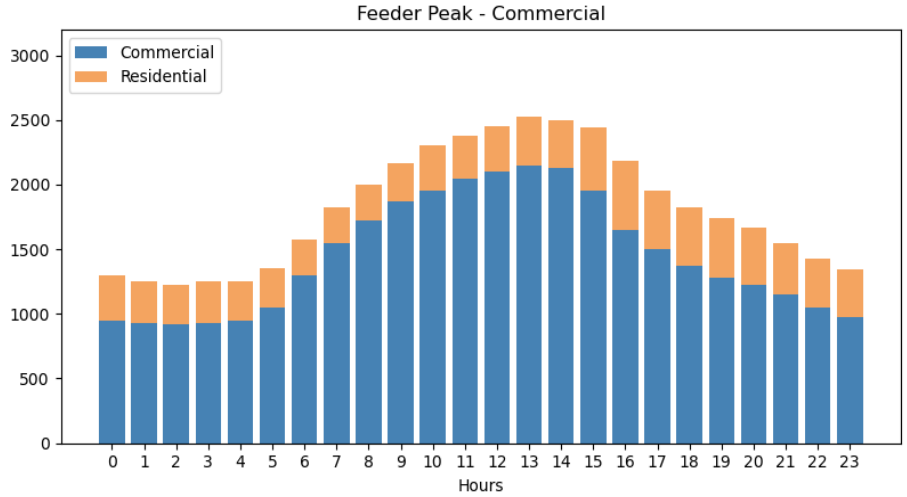
Connected Communities – Overview



- ✓ **Focused on one substation** nearing capacity (3rd & Hatch)
- ✓ **Engage 75-125 customers**
  - ✓ Residential, multitenant, SMB, C&I
- ✓ **The project will unlock:**
  - ✓ 1.0 - 2.25 MW of flexibility using buildings & DERs
  - ✓ Save up to 900 MWh/yr from EE measures
  - ✓ Reduce emissions by up to 650,000 lb CO_2e/yr
- ✓ **Playbooks to scale**

Distribution issues - Locational approach





Equipment packages

Residential (SF/MF)

Weatherize

Smart Thermostats

SMB Commercial Package

Lights

Smart Thermostats

RTU Control

Resi Additional components

Electric Heat Pump

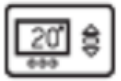
Dual Fuel Heat Pump

Connected Water Heater

Large Commercial Package

Additional Sensors

Lights



HVAC Optimization

BAS Integration

Flexibility in Buildings

Strategy	Type	Equipment	Response	Building Types
Zone pre-conditioning	Load shift	HVAC	1+ hours	Res-SF, Res-MF, SMB, C&I
Zone temperature setpoint adjustment	Load shift	HVAC	~15 mins	Res-SF, Res-MF, SMB, C&I
Lighting dimming	Load shed	Lighting	< 1 min	SMB, C&I
Shift electric demand to off-peak	Load shift	Battery Electric Storage System	< 1 min	Res-SF, Res-MF, SMB, C&I
Shift heating/cooling load to off-peak	Load shift	Thermal Energy Storage (TES)	15 - 30 mins	C&I

Open Questions…

- *Control*
  - *Manual versus automated approach in different typologies*
- *Business Model*
  - *Advance notice versus no notice/ direct control with opportunity for opt out*
  - *Fixed participation rate or performance-based*
- *EM&V:*
  - *How to value dynamic grid services and energy efficiency*

Contact

Alicia Noriega
alician@edoenergy.com

Smart Tools for Efficient HVAC Performance (STEP) Campaign

Pacific Northwest NATIONAL LABORATORY

STEP CAMPAIGN

Scan this QR code to visit our website

Contact: christian.valoria@pnnl.gov

The STEP Campaign aims to increase adoption of smart diagnostic tools to streamline HVAC system performance testing and troubleshooting, reducing energy-wasting faults and improving occupant comfort.

To join the STEP Campaign, visit: bit.ly/3DFmEaE

HVAC Contractors and Technicians

- Reduce callbacks, improve consistency and quality, streamline processes
- Find out where to get training on smart diagnostic tools
- Be recognized for successful adoption of smart diagnostic tools!

Utilities and Program Implementers

- Streamline quality installation and quality maintenance programs
- Improve engagement with your contractors
- Be recognized for programs that utilize smart diagnostic tools!

HVAC Training Organizations

- Offer qualified training on System Performance with smart diagnostic tools
- Promote your training events
- Be recognized for providing training!

Weatherization Organizations

- Ensure your ASHP/CAC installations are operating at optimized efficiency
- Develop pilot with PNNL team
- Be recognized!

ORGANIZING PARTNERS

ACCA · BUILDING PERFORMANCE ASSOCIATION · CEE Working Together, Advancing Efficiency · HVAC Excellence · NATE · neea · U.S. DEPARTMENT OF ENERGY

Buildings UP

The Buildings Upgrade Prize

AMERICAN MADE
U.S. DEPARTMENT OF ENERGY

Building capacity to transform U.S. buildings into energy-efficient and clean energy-ready homes, commercial spaces, and communities

Upgrading existing buildings to efficiently run on clean energy will help address climate change. This means transitioning **residential and commercial buildings** to efficient electric equipment, such as **heat pumps and heat pump water heaters**, and ensuring comfort with measures such as **insulation and air sealing**.

Teams participating in **Buildings UP** will develop innovative plans to leverage the billions of dollars through the Bipartisan Infrastructure Law, the Inflation Reduction Act, utility rebate programs, and many other funding sources available and capitalize on this unprecedented opportunity to improve our homes, businesses, and communities.

Buildings UP will award more than **$22 million** in cash prizes and expert technical assistance to bring winning ideas to life.

www.heroX.com/buildingsUP

Form Your Team and Submit Your Application by July 2023!

- Community-based organizations
- Local governments
- Utilities
- Non-profit organizations
- For-profit energy efficiency companies
- and more!

Multi-stakeholder teams are encouraged

Application support available for new and under-resourced teams

Follow Buildings UP on HeroX for prize info and updates
Questions: buildingsUP@nrel.gov

Explore the Residential Program Guide

Resources to help improve your program and reach energy efficiency targets:

- Handbooks - explain *why* and *how* to implement specific stages of a program.
- Quick Answers - provide answers and resources for common questions.
- Proven Practices posts - include lessons learned, examples, and helpful tips from successful programs.
- Technology Solutions NEW! - present resources on advanced technologies, **HVAC** & **Heat Pump Water Heaters**, including installation guidance, marketing strategies, & potential savings.
- Health + Home Performance Infographic – spark homeowner conversations.

https://rpsc.energy.gov

Health + Home Performance Infographic

DOE's new Health + Home Performance Infographic reveals the link between efficiency and health – something everyone cares about. Efficiency programs and contractors can use the question-and-answer format to discover a homeowner's needs.

The infographic is ideal for the "kitchen table" conversations where people decide what to do – and who they want to do it. It also has links for homeowners to find a qualified contractor if they do not already have one.

Download this infographic from DOE's Better Buildings Residential Network.

Looking for photos to help tell your energy efficiency story? Visit our image libraries: https://www.energy.gov/eere/better-buildings-residential-network/articles/image-libraries

Thank You!

Follow us to plug into the latest Better Buildings news and updates!

Better Buildings Twitter with #BBResNet

Better Buildings LinkedIn

Office of Energy Efficiency and Renewable Energy Facebook

Please send any follow-up questions or future call topic ideas to:
bbresidentialnetwork@ee.doe.gov